Teacher's Scoring Guide

Grade 6
Mathematics

Fall 2008

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Indiana Statewide Testing for Educational Progress

20942-W

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INTRODUCTION

During the fall of 2008, Indiana students in Grades 3 through 8 and Grade 10 participated in the administration of *ISTEP+*. The test for *ISTEP+* Fall 2008 consisted of a multiple-choice section and an applied skills section. For the fall testing, the multiple-choice section was machine-scored. The applied skills section, which consisted of open-ended questions, was hand-scored.

Test results for both the multiple-choice and applied skills sections as well as images of the applied skills student responses will be available online in late November 2008. *ISTEP+* Student Labels and Student Reports will be sent to the schools in early December 2008. It is the expectation of the Indiana Department of Education that schools will take this opportunity to invite students and parents to sit down with teachers to discuss the results. To support this endeavor, the Indiana Department of Education has prepared the following *Teacher's Scoring Guide*. The purpose of this guide is to help teachers to:

- understand the methods used to score the *ISTEP+* Fall 2008 applied skills section, and
- discuss and interpret these results with students and parents.

In order to use this guide effectively, you will also need the Student Report and a copy of the student's applied skills responses.

There are two scoring guides for Grade 6, English/Language Arts and Mathematics. In this Mathematics guide, you will find:

- an introduction,
- a list of the Mathematics Grade 5 Indiana Academic Standards,*
- rubrics (scoring rules) used to score the open-ended questions,
- anchor papers that are actual examples of student work (transcribed in this guide for clarity and ease of reading), and
- descriptions of the ways in which the response meets the rubric criteria for each of the score points.

When you review the contents of the scoring guide, keep in mind that this guide is an overview. If you have questions, write via e-mail (istep@doe.in.gov) or call the Indiana Department of Education at (317) 232-9050.

* Because *ISTEP+* is administered early in the fall, the Grade 6 test is based on the academic standards through Grade 5.

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INTRODUCTION TO THE MATHEMATICS APPLIED SKILLS SECTION

The applied skills section that students responded to this past fall in Grade 6 allowed the students to demonstrate their understanding of Mathematics in a variety of ways, such as applying formulas, explaining a solution, drawing a picture, or interpreting a table or graph.

STRUCTURE

The applied skills section for Grade 6 Mathematics was divided into two tests, Test 7 and Test 8. Each test consisted of seven open-ended questions.

SCORING

Each open-ended question was scored according to its own rubric. A rubric is a description of student performance that clearly articulates the requirements for each of the score points. Scoring rubrics are essential because they ensure that all papers are scored objectively. Each rubric for this administration of the *ISTEP+* Grade 6 Mathematics assessment has a maximum possible score of two or three score points.

NOTE: Images of the questions and student work have been reduced to fit the format of this guide. As a result, figures and diagrams in measurement questions will appear smaller in this guide than in the actual test book.

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Rubrics are established prior to testing to describe the performance criteria for each score point. The performance criteria determine the number of score points possible for each question. This process ensures that all responses are judged objectively.

1. Students should not be penalized for omitting:
   - degree symbols
   - dollar signs ($) or cent signs (¢)
   - zeros for place holders; for example, either 0.75 or .750 could be used
   - labels for word problems; for example, *miles*

     NOTE: Students WILL be penalized for use of incorrect labels.

2. Students should not be penalized for:
   - spelling or grammar errors
   - using abbreviations; for example, *ft* or *feet* would be acceptable

3. Students should be given credit for:
   - entries in the workspace that indicate understanding of a complete process even if the response on the answer line is incorrect (i.e., the student would receive partial credit for questions with rubrics that allow for scoring the work)
   - answers not written on the answer line; for example, an answer could be given in the workspace or in the explanation (however, in some cases, because of the multiple calculations in the workspace, placement of an answer on the answer line is necessary to determine which response the student intended). Students WILL be penalized for incorrect answers written on the answer line even if the correct answer appears in the workspace.
   - line graphs only if lines connect the points

CONDITION CODES

If a response is unscorable, it is assigned one of the following condition codes:

A Blank/No response/Refusal
B Illegible
C Written predominantly in a language other than English
D Insufficient response/Copied from text

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MATHEMATICS GRADE 5
INDIANA ACADEMIC STANDARDS

- **Number Sense**
  Students compute with whole numbers, decimals, and fractions, and understand the relationship among decimals, fractions, and percents. They understand the relative magnitudes of numbers. They understand prime and composite numbers.

- **Computation**
  Students solve problems involving multiplication and division of whole numbers and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals.

- **Algebra and Functions**
  Students use variables in simple expressions, compute the value of an expression for specific values of the variable, and plot and interpret the results. They use two-dimensional coordinate grids to represent points and graph lines.

- **Geometry**
  Students identify, describe, and classify the properties of plane and solid geometric shapes and the relationships between them.

- **Measurement**
  Students understand and compute the areas and volumes of simple objects, as well as measuring weight, temperature, time, and money.

- **Data Analysis and Probability**
  Students collect, display, analyze, compare, and interpret data sets. They use the results of probability experiments to predict future events.

- **Problem Solving**
  Students make decisions about how to approach problems and communicate their ideas. Students use strategies, skills, and concepts in finding and communicating solutions to problems. Students determine when a solution is complete and reasonable and move beyond a particular problem by generalizing to other situations.

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Problem Solving is identified as a Process Skill in the Indiana Academic Standards. To ensure that the *ISTEP+* questions that assess this Process Skill are grade-appropriate and that the questions use skills that are contained in the standards, these questions are developed by including at least two different indicators from Content Skills in addition to the indicator from the Process Skill. Some of the Content Standards included in the Content Skills are Computation, Geometry, and Algebra. The additional indicators may be from the same or different Content Skills.

The Content Skills used for each of the Process Skill questions in the Grade 6 applied skills section are shown in the following chart.

PROCESS SKILL QUESTIONS

Question	Process Skill	Content Skills *Item may map to more than one indicator in a standard.*
Test 7		
5	Problem Solving	Algebra and Functions, Measurement
7	Problem Solving	Number Sense, Measurement
Test 8		
2	Problem Solving	Number Sense, Measurement
5	Problem Solving	Number Sense, Computation

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Test 7—Question 1: Algebra and Functions

1 Read the following phrase.

three more than twice n

On the line below, write an expression to represent the phrase.

Expression _____

On the line below, evaluate the expression you wrote when $n = 31$.

Answer _____

Exemplary Response:

- $2n + 3$

OR

- Other valid expression

AND

- 65

NOTE: If an incorrect expression is evaluated correctly, award one point.

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

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SCORE POINT 2

1 Read the following phrase.

three more than twice n

On the line below, write an expression to represent the phrase.

Expression 3 + 2n

On the line below, evaluate the expression you wrote when $n = 31$.

Answer 65

Test 7—Question 1 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows the correct expression of $3 + 2n$ and gives a correct answer of 65. The response receives a Score Point 2.

SCORE POINT 1

1 Read the following phrase.

three more than twice n

On the line below, write an expression to represent the phrase.

Expression 3 + 2n

On the line below, evaluate the expression you wrote when $n = 31$.

Answer 36

Test 7—Question 1 Score Point 1

This response shows the correct expression of $3 + 2n$. However, an incorrect answer is given. Therefore, this response receives a Score Point 1.

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Test 7—Question 1
Score Point 0

This response shows an incorrect expression and an incorrect answer. Therefore, this response receives a Score Point 0.

SCORE POINT 0

1 Read the following phrase.

three more than twice n

On the line below, write an expression to represent the phrase.

Expression 3 × n =2

On the line below, evaluate the expression you wrote when $n = 31$.

Answer 6

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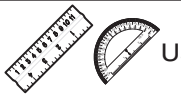
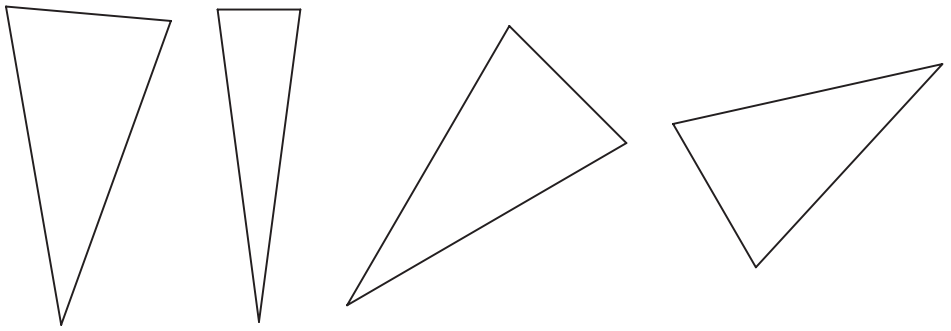
Test 7—Question 2: Geometry

2  Use your ruler and protractor to help solve this problem.

Two of the triangles below are congruent.



On the line below, name the two congruent triangles.

Answer _____

On the lines below, explain how you used your ruler and your protractor to prove the two triangles you named are congruent.

_____

_____

_____

_____

Exemplary Response:

- Triangles A and C

AND

- I used my ruler to prove that the corresponding sides in triangles A and C were the same length. I used my protractor to prove that the corresponding angles in triangles A and C were the same measure.

OR

- Other valid response

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

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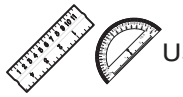
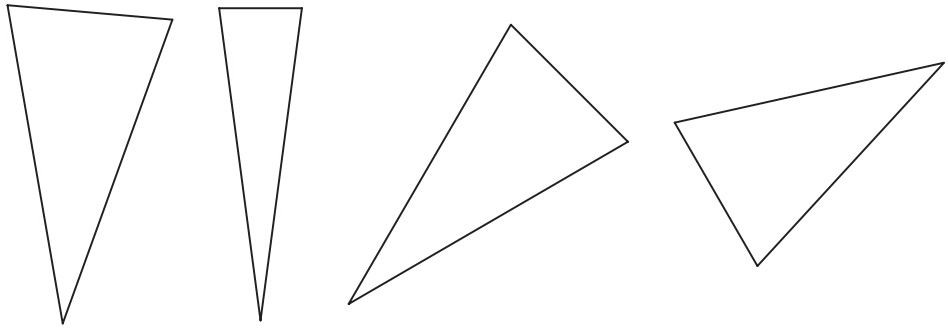
Test 7—Question 2
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives the correct answer of A and C and a valid explanation. The response receives a Score Point 2.

SCORE POINT 2

2  Use your ruler and protractor to help solve this problem.

Two of the triangles below are congruent.



On the line below, name the two congruent triangles.

Answer A and C

On the lines below, explain how you used your ruler and your protractor to prove the two triangles you named are congruent.

I chose A and C all 3 of their sides are the same. Also,
all 3 of their angles are the same

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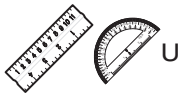
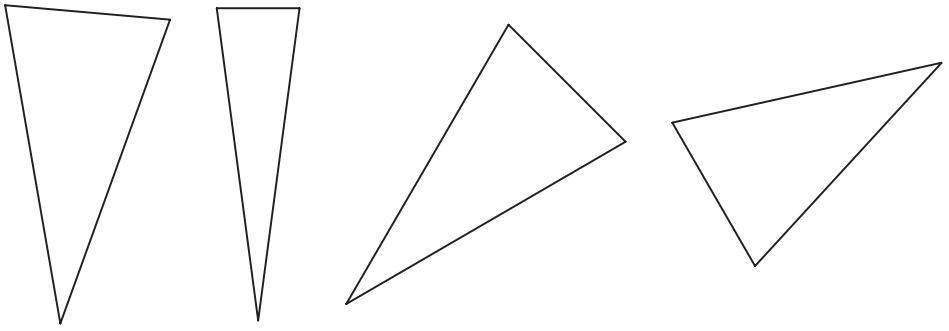
SCORE POINT 1

2  Use your ruler and protractor to help solve this problem.

Two of the triangles below are congruent.



On the line below, name the two congruent triangles.

Answer A and C

On the lines below, explain how you used your ruler and your protractor to prove the two triangles you named are congruent.

I measured the sides with my ruler then I use my protractor to see what kind of angle they were.

Test 7—Question 2
Score Point 1

This response gives the correct answer of A and C. However, the student gives an incomplete explanation. The student does not indicate that the corresponding sides and angles of triangles A and C are congruent. Therefore, this response receives a Score Point 1.

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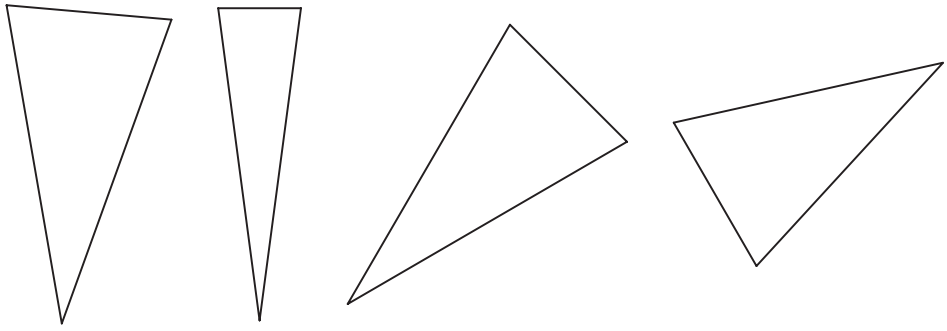
Test 7—Question 2
Score Point 0

This response gives an incorrect answer and an invalid explanation. Therefore, this response receives a Score Point 0.

SCORE POINT 0

2 Use your ruler and protractor to help solve this problem.

Two of the triangles below are congruent.



On the line below, name the two congruent triangles.

Answer CD

On the lines below, explain how you used your ruler and your protractor to prove the two triangles you named are congruent.

They are bolth the same length, but they are just on different angles.

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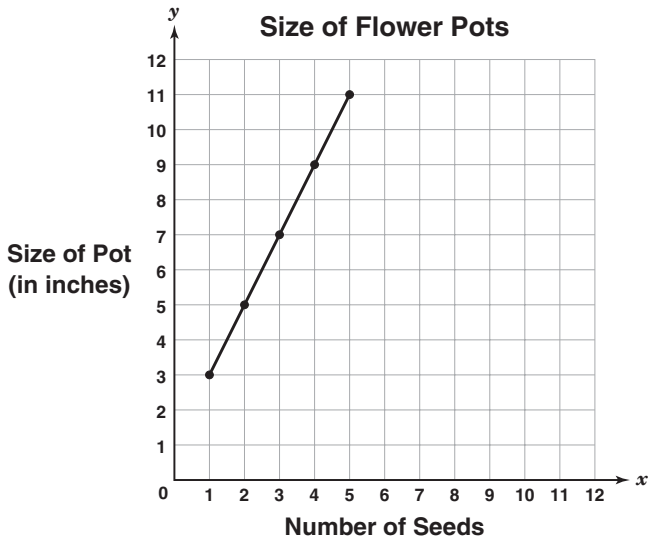
Test 7—Question 3: Algebra and Functions

3 Ellie is planting different numbers of seeds in flower pots. The graph below shows the size, in inches, of each pot, y, Ellie uses to plant x seeds.



According to the graph, what is the size, in inches, of the flower pot Ellie uses to plant 4 seeds?

Answer _____ inches

What is the difference, in inches, of the size of the flower pot Ellie uses to plant 4 seeds compared to the flower pot that Ellie uses to plant 2 seeds?

Answer _____ inches

Exemplary Response:

- 9 inches

AND

- 4 inches

NOTE: Award one point for a correct total difference based on an incorrect initial answer.

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

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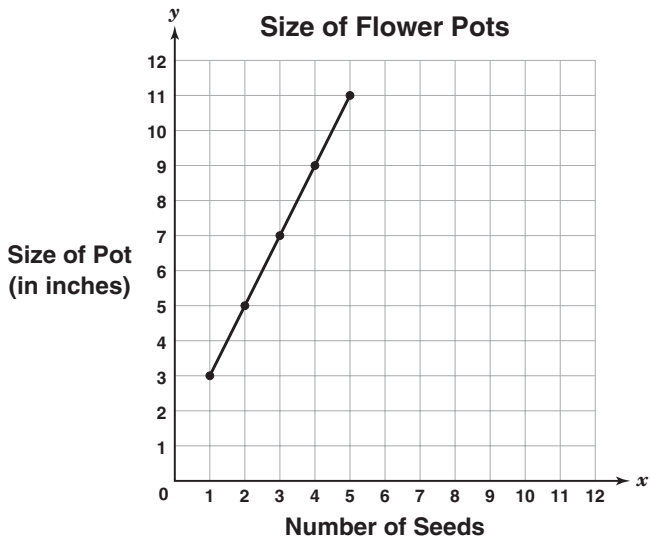
Test 7—Question 3
Score Point 2

This response matches the exemplary response contained in the rubric. The student shows the correct answers of 9 inches and 4 inches. The response receives a Score Point 2.

SCORE POINT 2

3 Ellie is planting different numbers of seeds in flower pots. The graph below shows the size, in inches, of each pot, y, Ellie uses to plant x seeds.



According to the graph, what is the size, in inches, of the flower pot Ellie uses to plant 4 seeds?

Answer 9 inches

What is the difference, in inches, of the size of the flower pot Ellie uses to plant 4 seeds compared to the flower pot that Ellie uses to plant 2 seeds?

Answer 4 inches

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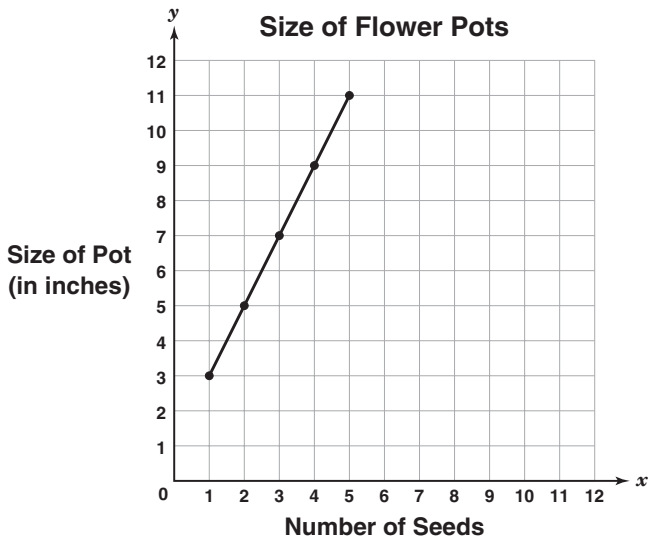
SCORE POINT 1

3 Ellie is planting different numbers of seeds in flower pots. The graph below shows the size, in inches, of each pot, y, Ellie uses to plant x seeds.



According to the graph, what is the size, in inches, of the flower pot Ellie uses to plant 4 seeds?

Answer 9 inches

What is the difference, in inches, of the size of the flower pot Ellie uses to plant 4 seeds compared to the flower pot that Ellie uses to plant 2 seeds?

Answer 5 inches

Test 7—Question 3
Score Point 1

This response shows the correct answer of 9 inches. However, the student gives an incorrect answer of 5 inches for the second answer. Therefore, this response receives a Score Point 1.

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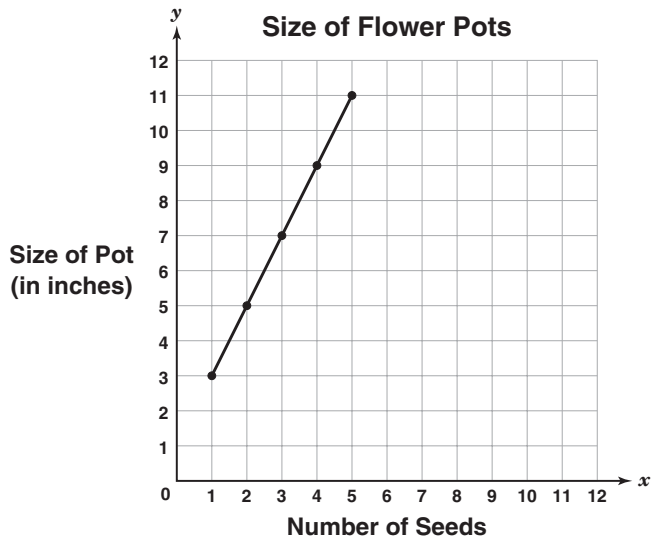
Test 7—Question 3
Score Point 0

This response shows two incorrect answers. Therefore, this response receives a Score Point 0.

SCORE POINT 0

3 Ellie is planting different numbers of seeds in flower pots. The graph below shows the size, in inches, of each pot, y, Ellie uses to plant x seeds.



According to the graph, what is the size, in inches, of the flower pot Ellie uses to plant 4 seeds?

Answer 15 inches

What is the difference, in inches, of the size of the flower pot Ellie uses to plant 4 seeds compared to the flower pot that Ellie uses to plant 2 seeds?

Answer 8 inches

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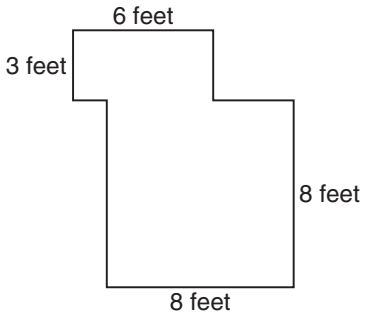
Test 7—Question 4: Measurement

4 Chelsea built a sandbox. The sandbox consists of 2 rectangles, as shown in the figure below.



What is the area, in square feet, of the sandbox?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

Answer _____ square feet

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Exemplary Response:

- 82 square feet

AND

- Correct process

Sample Process:

- Area = length × width

  $3 \times 6 = 18$

  $8 \times 8 = 64$

  $18 + 64 = 82$ square feet

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

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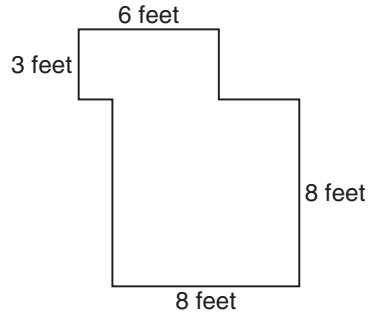
SCORE POINT 2

4 Chelsea built a sandbox. The sandbox consists of 2 rectangles, as shown in the figure below.



What is the area, in square feet, of the sandbox?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

$$\begin{array}{r} 8 \\ \times 8 \\ \hline 64 \end{array} \qquad \begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 64 \\ 18 \\ \hline 82 \end{array}$$

Answer 82 square feet

Test 7—Question 4
Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and the correct answer of 82 square feet. The response receives a Score Point 2.

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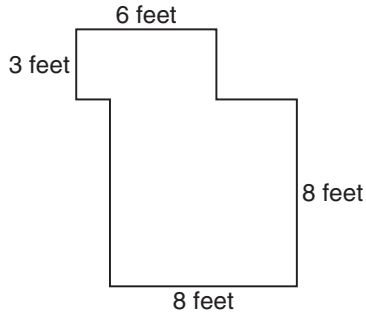
Test 7—Question 4
Score Point 1

This response shows a correct process. However, the student makes an error in computation when multiplying 8 and 8, which results in an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

4 Chelsea built a sandbox. The sandbox consists of 2 rectangles, as shown in the figure below.



What is the area, in square feet, of the sandbox?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

$$\begin{array}{r} 8 \\ \times\ 8 \\ \hline 62\ ^2ft \end{array} \qquad \begin{array}{r} 3 \\ \times\ 6 \\ \hline 18\ ^2ft \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 62\ ^2ft \\ +\ 18\ ^2ft \\ \hline 80\ ^2ft \end{array}$$

Answer 80 square feet

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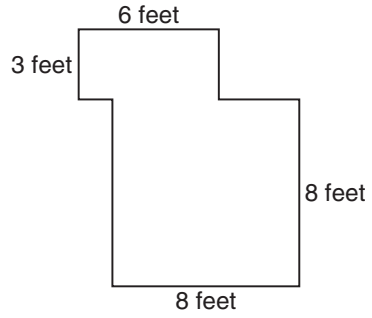
SCORE POINT 0

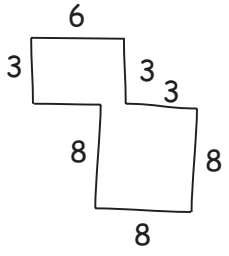
4 Chelsea built a sandbox. The sandbox consists of 2 rectangles, as shown in the figure below.



What is the area, in square feet, of the sandbox?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work



Answer 39 square feet

Test 7—Question 4
Score Point 0

This response shows an incorrect process. The student attempts to find the perimeter of the sandbox instead of the area. Therefore, this response receives a Score Point 0.

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Test 7—Question 5: Problem Solving

5 An ice-cream parlor is giving away 2 free scoops of ice cream to each adult and 1 free scoop of ice cream to each child during a one-hour event. The ice-cream parlor collected the data shown in the table below during the event.

Ice-Cream Event

Time	Number of Adults	Number of Children
9:00 A.M.–9:15 A.M.	9	11
9:16 A.M.–9:30 A.M.	6	8
9:31 A.M.–9:45 A.M.	11	13
9:46 A.M.–10:00 A.M.	13	15

Use the expression $2a + 1c$, where a represents the number of adults and c represents the number of children that took part in the event, to find the number of free scoops given away from 9:16 A.M. until 9:30 A.M.

Show All Work

Answer _____ scoops

If each free scoop of ice cream weighed 4 ounces, how many POUNDS of ice cream were given away from 9:16 A.M. to 9:30 A.M.?

16 ounces = 1 pound

Show All Work

Answer _____ pounds

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Exemplary Response:

- 20 scoops

AND

- Correct process

Sample Process:

- $2a + 1c = 2(6) + 1(8)$

  $= 12 + 8$

  $= 20$

AND

- 5 pounds

AND

- Correct process

Sample Process:

- 20×4 ounces $= 80$ ounces

  $80 \div 16$ ounces per pound $= 5$ pounds

OR

- Other valid process

NOTE: Award one point for correct process and the correct number of pounds based on an incorrect number of scoops.

Rubric:

3 points	Exemplary response
2 points	Two correct answers only OR One correct answer AND Two correct processes; error in computation
1 point	One correct answer only OR Two correct processes; error in computation
0 points	Other

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Test 7—Question 5
Score Point 3

This response matches the exemplary response contained in the rubric. The student shows two correct processes and the correct answers of 20 scoops and 5 pounds. The response receives a Score Point 3.

SCORE POINT 3

5 An ice-cream parlor is giving away 2 free scoops of ice cream to each adult and 1 free scoop of ice cream to each child during a one-hour event. The ice-cream parlor collected the data shown in the table below during the event.

Ice-Cream Event

Time	Number of Adults	Number of Children
9:00 A.M.–9:15 A.M.	9	11
9:16 A.M.–9:30 A.M.	6	8
9:31 A.M.–9:45 A.M.	11	13
9:46 A.M.–10:00 A.M.	13	15

Use the expression $2a + 1c$, where a represents the number of adults and c represents the number of children that took part in the event, to find the number of free scoops given away from 9:16 A.M. until 9:30 A.M.

Show All Work

$$\begin{array}{r} {\scriptstyle 1} \\ 12 \\ +\ 8 \\ \hline 20 \end{array}$$

26 + 18 =
6 × 2 = 12 1 × 8 = 8

Answer 20 scoops

If each free scoop of ice cream weighed 4 ounces, how many POUNDS of ice cream were given away from 9:16 A.M. to 9:30 A.M.?

16 ounces = 1 pound

Show All Work

$$\begin{array}{r} 20 \\ \times\ 4 \\ \hline 80 \end{array} \qquad 16\overline{)80} \quad 5 \quad \begin{array}{r} -80 \\ \hline 00 \end{array} \qquad \begin{array}{r} {\scriptstyle 3} \\ 16 \\ \times\ 5 \\ \hline 80 \end{array}$$

Answer 5 pounds

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SCORE POINT 2

5 An ice-cream parlor is giving away 2 free scoops of ice cream to each adult and 1 free scoop of ice cream to each child during a one-hour event. The ice-cream parlor collected the data shown in the table below during the event.

Ice-Cream Event

Time	Number of Adults	Number of Children
9:00 A.M.–9:15 A.M.	9	11
9:16 A.M.–9:30 A.M.	6	8
9:31 A.M.–9:45 A.M.	11	13
9:46 A.M.–10:00 A.M.	13	15

Use the expression $2a + 1c$, where a represents the number of adults and c represents the number of children that took part in the event, to find the number of free scoops given away from 9:16 A.M. until 9:30 A.M.

Show All Work

$$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array} + \begin{array}{r} 8 \\ \times 1 \\ \hline 8 \end{array} = 20$$

Answer 20 scoops

If each free scoop of ice cream weighed 4 ounces, how many POUNDS of ice cream were given away from 9:16 A.M. to 9:30 A.M.?

16 ounces = 1 pound

Show All Work

$$\begin{array}{r} {\scriptstyle 1}16 \\ \times\ 3 \\ \hline 48 \\ -16 \\ \hline 32 \end{array} \qquad \begin{array}{r} 20 \\ \times\ 4 \\ \hline 40 \end{array} \qquad \begin{array}{r} 2 \\ 16\overline{)\,40} \\ -32 \\ \hline 8 \end{array}$$

Answer $2\frac{1}{2}$ pounds

Test 7—Question 5 Score Point 2

This response shows two correct processes and a correct answer of 20 scoops. However, the student makes an error in computation when multiplying 20 and 4, which results in an incorrect answer for the weight of the ice cream. Therefore, this response receives a Score Point 2.

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Test 7—Question 5
Score Point 1

This response shows an incorrect process to determine the number of scoops of ice cream. However, the student shows a correct process to determine the weight of the ice cream and a correct answer of 7 pounds based on an incorrect number of scoops. Therefore, this response receives a Score Point 1.

SCORE POINT 1

5 An ice-cream parlor is giving away 2 free scoops of ice cream to each adult and 1 free scoop of ice cream to each child during a one-hour event. The ice-cream parlor collected the data shown in the table below during the event.

Ice-Cream Event

Time	Number of Adults	Number of Children
9:00 A.M.–9:15 A.M.	9	11
9:16 A.M.–9:30 A.M.	6	8
9:31 A.M.–9:45 A.M.	11	13
9:46 A.M.–10:00 A.M.	13	15

Use the expression $2a + 1c$, where a represents the number of adults and c represents the number of children that took part in the event, to find the number of free scoops given away from 9:16 A.M. until 9:30 A.M.

Show All Work

$2 \times 6 + 2 \times 8$
$12 + 16$
(28)

Answer 28 scoops

If each free scoop of ice cream weighed 4 ounces, how many POUNDS of ice cream were given away from 9:16 A.M. to 9:30 A.M.?

16 ounces = 1 pound

Show All Work

$^{3}28s \times 4oz = 112oz$

$16\overline{)112oz}\ 7$, -112, 000

$^{3}16 \times 5 = 80$

$^{3}16 \times 6 = 96$

$^{4}16 \times 7 = 112$

Answer 7 pounds

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SCORE POINT 0

5 An ice-cream parlor is giving away 2 free scoops of ice cream to each adult and 1 free scoop of ice cream to each child during a one-hour event. The ice-cream parlor collected the data shown in the table below during the event.

Ice-Cream Event

Time	Number of Adults	Number of Children
9:00 A.M.–9:15 A.M.	9	11
9:16 A.M.–9:30 A.M.	6	8
9:31 A.M.–9:45 A.M.	11	13
9:46 A.M.–10:00 A.M.	13	15

Use the expression $2a + 1c$, where a represents the number of adults and c represents the number of children that took part in the event, to find the number of free scoops given away from 9:16 A.M. until 9:30 A.M.

Show All Work

$$\begin{array}{r} 6 \\ +\ 8 \\ \hline 14 \end{array}$$

Answer 14 scoops

If each free scoop of ice cream weighed 4 ounces, how many POUNDS of ice cream were given away from 9:16 A.M. to 9:30 A.M.?

16 ounces = 1 pound

Show All Work

$$\begin{array}{r} 8 \\ \times\ 4 \\ \hline 32 \end{array} = 2 \qquad \begin{array}{r} +16 \\ 16 \\ \hline 32 \end{array}$$

Answer 2 pounds

Test 7—Question 5 Score Point 0

This response shows two incorrect processes that lead to incorrect answers for the number of scoops and the weight of the ice cream. Therefore, this response receives a Score Point 0.

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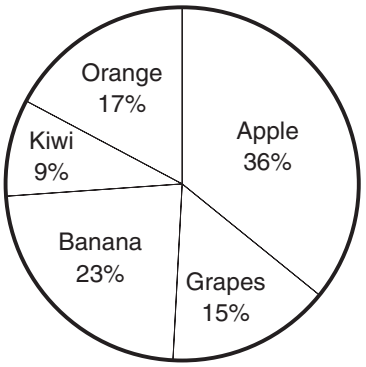
Test 7—Question 6: Number Sense

6 Greg conducted a survey of 100 classmates to determine their favorite fruits. The results of the survey are shown in the circle graph below.

Favorite Fruits



Which two fruits represent $\frac{2}{5}$ of the students' favorites?

Show All Work

Answer _____ and _____

Exemplary Response:

- Bananas and Oranges

AND

- Correct process

Sample Process:

- $\frac{2}{5} = \frac{4}{10} = \frac{40}{100} = 40\%$

Bananas	23%
+ Oranges	17%
	40%

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only
	OR
	Correct process; error in computation
0 points	Other

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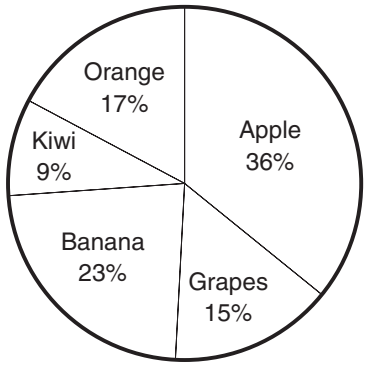
SCORE POINT 2

6 Greg conducted a survey of 100 classmates to determine their favorite fruits. The results of the survey are shown in the circle graph below.

Favorite Fruits



Which two fruits represent $\frac{2}{5}$ of the students' favorites?

Show All Work

$$\begin{array}{r} 17 \\ +23 \\ \hline 40 \end{array} \qquad 5\overline{)100} = 20 \quad \begin{array}{r} 10 \\ \hline 00 \end{array} \qquad \begin{array}{r} 20 \\ \times\ 2 \\ \hline 40 \end{array}$$

Answer Orange and Banana

Test 7—Question 6
Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct answer of orange and banana. The response receives a Score Point 2.

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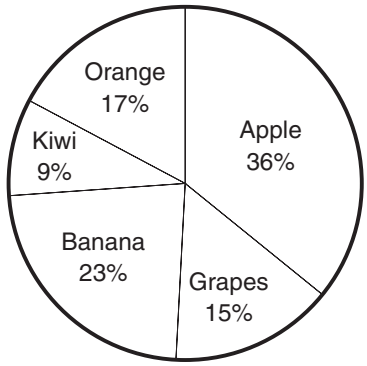
Test 7—Question 6
Score Point 1

This response gives the correct answer of bananas and oranges. However, the student does not show a correct process. Therefore, this response receives a Score Point 1.

SCORE POINT 1

6 Greg conducted a survey of 100 classmates to determine their favorite fruits. The results of the survey are shown in the circle graph below.

Favorite Fruits



Which two fruits represent $\frac{2}{5}$ of the students' favorites?

Show All Work

Answer Bananas and Oranges

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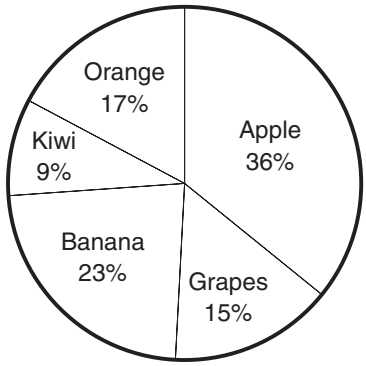
SCORE POINT 0

6 Greg conducted a survey of 100 classmates to determine their favorite fruits. The results of the survey are shown in the circle graph below.

Favorite Fruits



Which two fruits represent $\frac{2}{5}$ of the students' favorites?

Show All Work

36
15
17
9
23
100

$5\overline{)100}$ = 25

25
25
50

Answer apples and grapes

Test 7—Question 6
Score Point 0

This response shows an incorrect process that leads to an incorrect answer. Therefore, this response receives a Score Point 0.

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Test 7—Question 7: Problem Solving

7 Matthew's dad buys a cup of coffee every Friday morning and gives Matthew his change. This month, Matthew received $0.15, $0.01, $0.30, and $0.22.

Place these numbers in numerical order from least to greatest.

Answer _____

What is the total amount of money that Matthew received this month?

Show All Work

Answer $ _____

Exemplary Response:

- 0.01, 0.15, 0.22, 0.30

OR

- Other valid response

AND

- $0.68

AND

- Correct process

Sample Process:

- 0.15 + 0.01 + 0.30 + 0.22 = $0.68

OR

- Other valid process

NOTE: Award 1 point for a correct process with an error in computation.

Rubric:

2 points	Exemplary response
1 point	One or two correct components
0 points	Other

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SCORE POINT 2

7 Matthew's dad buys a cup of coffee every Friday morning and gives Matthew his change. This month, Matthew received $0.15, $0.01, $0.30, and $0.22.

Place these numbers in numerical order from least to greatest.

Answer $0.01, 0.15, 0.22, and 0.30

What is the total amount of money that Matthew received this month?

Show All Work

$0.15
0.01
+0.30
0.22
$0.68

Answer $ $0.68

Test 7—Question 7 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows the numbers from least to greatest, shows a correct process, and gives the correct answer of $0.68. The response receives a Score Point 2.

SCORE POINT 1

7 Matthew's dad buys a cup of coffee every Friday morning and gives Matthew his change. This month, Matthew received $0.15, $0.01, $0.30, and $0.22.

Place these numbers in numerical order from least to greatest.

Answer 0.15, 0.22, 0.30, 0.01

What is the total amount of money that Matthew received this month?

Show All Work

15
22
30
+ 1
68

Answer $ 0.68

Test 7—Question 7 Score Point 1

This response shows a correct process and gives a correct answer of $0.68. However, the student incorrectly shows the numbers from least to greatest. Therefore, this response receives a Score Point 1.

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Test 7—Question 7
Score Point 0

This response incorrectly shows the numbers from least to greatest, shows no process, and gives an incorrect answer. Therefore, this response receives a Score Point 0.

SCORE POINT 0

7 Matthew's dad buys a cup of coffee every Friday morning and gives Matthew his change. This month, Matthew received $0.15, $0.01, $0.30, and $0.22.

Place these numbers in numerical order from least to greatest.

Answer .01, .22, .15, .30

What is the total amount of money that Matthew received this month?

Show All Work

Answer $ $68.00

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Test 8—Question 1: Algebra and Functions

1 Katie sold 12 tickets to a school play. Katie's total sales, t, for the tickets is given by the formula

$$12 \times c = t$$

where c is the cost per ticket.

What were Katie's total sales if the cost of each ticket is \$5?

Show All Work

Answer \$ _____

Exemplary Response:

- \$60

AND

- Correct process

Sample Process:

- $12 \times c = t$

  $12 \times \$5 = \$60$

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

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Test 8—Question 1
Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct answer of $60. The response receives a Score Point 2.

SCORE POINT 2

1 Katie sold 12 tickets to a school play. Katie's total sales, t, for the tickets is given by the formula

$$12 \times c = t$$

where c is the cost per ticket.

What were Katie's total sales if the cost of each ticket is $5?

Show All Work

$$\begin{array}{r} {\scriptstyle 1} \\ 12 \\ \times\ 5 \\ \hline 60 \end{array}$$

Answer $ 60

Test 8—Question 1
Score Point 1

This response shows a correct process. However, the student makes an error in computation when multiplying 12 and 5, which results in an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

1 Katie sold 12 tickets to a school play. Katie's total sales, t, for the tickets is given by the formula

$$12 \times c = t$$

where c is the cost per ticket.

What were Katie's total sales if the cost of each ticket is $5?

Show All Work

$$\begin{array}{r} 12 \\ \times\ 5 \\ \hline \end{array}$$

t = $50

Answer $ 50

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SCORE POINT 0

1 Katie sold 12 tickets to a school play. Katie's total sales, t, for the tickets is given by the formula

$$12 \times c = t$$

where c is the cost per ticket.

What were Katie's total sales if the cost of each ticket is $5?

Show All Work

t = $5 12 ÷ 5 = $2.40

Answer $ 2.40

Test 8—Question 1
Score Point 0

This response shows an incorrect process that leads to an incorrect answer. The student divides instead of multiplying. Therefore, this response receives a Score Point 0.

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Test 8—Question 2: Problem Solving

2 Cole has $9.16 and is given $2.25 more. Steven has $13.64 and spends $2.28 at the store.

Compare the amount of money Cole and Steven now have by using the symbol for less than (<), equals (=), or greater than (>).

Show All Work

Answer $ _____ _____ $ _____

Exemplary Response:

- $11.41 > $11.36

OR

- $11.36 < $11.41

AND

- Correct process

Sample Process:

- $9.16 + $2.25 = $11.41
  $13.64 − $2.28 = $11.36
  $11.41 > $11.36

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

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SCORE POINT 2

2 Cole has $9.16 and is given $2.25 more. Steven has $13.64 and spends $2.28 at the store.

Compare the amount of money Cole and Steven now have by using the symbol for less than (<), equals (=), or greater than (>).

Show All Work

$$\begin{array}{r} {\scriptstyle 1} \\ \$9.16 \\ +\$2.25 \\ \hline \$11.41 \end{array} \qquad \begin{array}{r} {\scriptstyle 5} \\ \$13.\not{6}4 \\ -\$2.28 \\ \hline \$11.36 \end{array}$$

Answer $ 11.41 > $ 11.36

Test 8—Question 2 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and correctly compares the amount of money Cole and Steven now have. The response receives a Score Point 2.

SCORE POINT 1

2 Cole has $9.16 and is given $2.25 more. Steven has $13.64 and spends $2.28 at the store.

Compare the amount of money Cole and Steven now have by using the symbol for less than (<), equals (=), or greater than (>).

Show All Work

$$\begin{array}{r} \\ \$9.16 \\ +\ 2.25 \\ \hline \$11.31 \end{array} \qquad \begin{array}{r} {\scriptstyle 5\,1} \\ \$13.\not{6}4 \\ -\ 2.28 \\ \hline \$11.36 \end{array}$$

Answer $ 11.31 < $ 11.36

Test 8—Question 2 Score Point 1

This response shows a correct process. However, the student makes an error in computation when adding $9.16 and $2.25, which results in an incorrect amount of money that Cole now has. Therefore, this response receives a Score Point 1.

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Test 8—Question 2
Score Point 0

This response shows an incorrect process that leads to an incorrect amount of money that Cole now has. The student uses subtraction instead of addition. Therefore, this response receives a Score Point 0.

SCORE POINT 0

2 Cole has $9.16 and is given $2.25 more. Steven has $13.64 and spends $2.28 at the store.

Compare the amount of money Cole and Steven now have by using the symbol for less than (<), equals (=), or greater than (>).

Show All Work

$$\begin{array}{r} {}^{1} \\ 9.16 \\ -\ 2.25 \\ \hline 6.91 \end{array} \qquad \begin{array}{r} {}^{5} \\ 13.64 \\ -\ 2.28 \\ \hline 11.36 \end{array}$$

Answer $ 6.91 > $ 11.36

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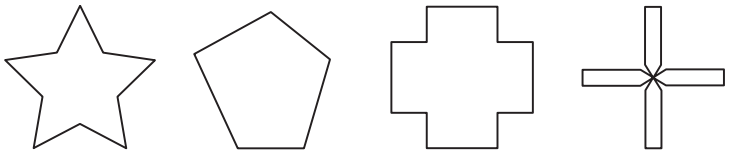
Test 8—Question 3: Geometry

3 Look at the shapes below.



A B C D

On the line below, list all the shapes that have BOTH reflectional and rotational symmetry.

Answer _____

Exemplary Response:

- A, C, and D

NOTE: Award 0 points if an incorrect shape is named.

Rubric:

2 points	Exemplary response
1 point	Only two correct answers
0 points	Other

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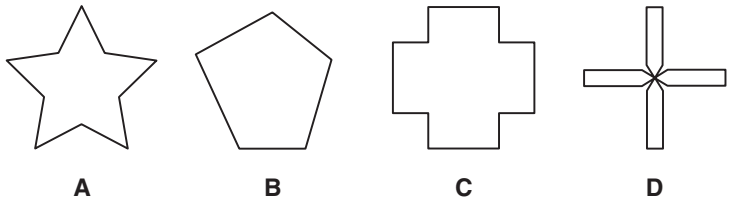
Test 8—Question 3
Score Point 2

This response matches the exemplary response contained in the rubric. The student correctly identifies the three figures that have both reflectional and rotational symmetry. The response receives a Score Point 2.

SCORE POINT 2

3 Look at the shapes below.



A B C D

On the line below, list all the shapes that have BOTH reflectional and rotational symmetry.

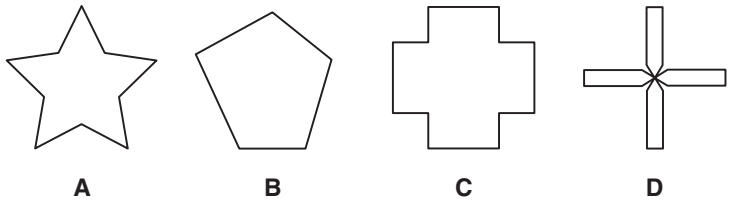
Answer A, C, & D

Test 8—Question 3
Score Point 1

This response correctly identifies only two of the figures that have both reflectional and rotational symmetry. Therefore, this response receives a Score Point 1.

SCORE POINT 1

3 Look at the shapes below.



A B C D

On the line below, list all the shapes that have BOTH reflectional and rotational symmetry.

Answer D and A

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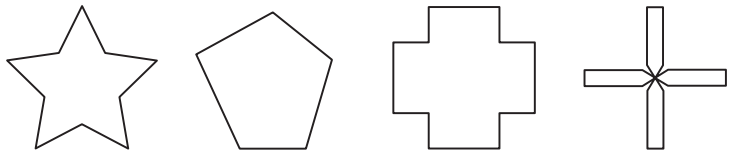
SCORE POINT 0

3 Look at the shapes below.



A B C D

On the line below, list all the shapes that have BOTH reflectional and rotational symmetry.

Answer B, C

Test 8—Question 3
Score Point 0

This response correctly identifies only one of the figures that have both reflectional and rotational symmetry. Therefore, this response receives a Score Point 0.

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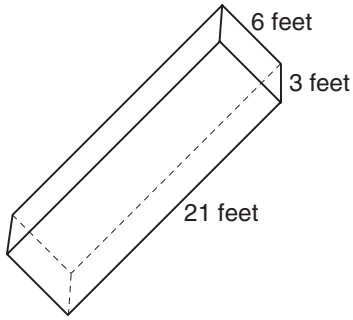
Test 8—Question 4: Measurement

4 What is the volume, in cubic feet, of the rectangular prism shown below?



Volume of rectangular prism $= lwh$
$=$ length $\times$ width $\times$ height

Show All Work

Answer _____ cubic feet

Exemplary Response:

- 378 cubic feet

AND

- Correct process

Sample Process:

- Volume $=$ length $\times$ width $\times$ height
  $= 21 \times 3 \times 6$
  $= 378$

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

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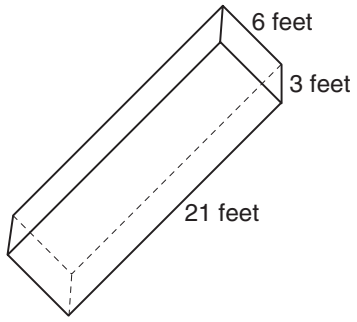
SCORE POINT 2

4 What is the volume, in cubic feet, of the rectangular prism shown below?



Volume of rectangular prism $= lwh$
$=$ length $\times$ width $\times$ height

Show All Work

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 18 \\ \times 21 \\ \hline 18 \\ 360 \\ \hline 378 \end{array}$$

Answer 378 cubic feet

Test 8—Question 4 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct answer of 378 cubic feet. The response receives a Score Point 2.

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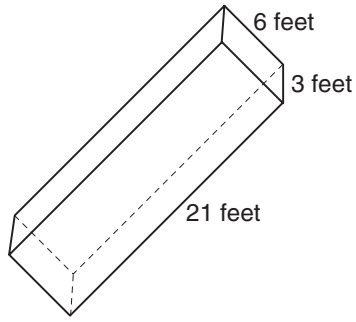
Test 8—Question 4
Score Point 1

This response shows a correct process for determining the volume. However, the student makes an error in computation when multiplying 18 and 21, which results in an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

4 What is the volume, in cubic feet, of the rectangular prism shown below?



Volume of rectangular prism $= lwh$
$=$ length $\times$ width $\times$ height

Show All Work

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 18 \\ \times 21 \\ \hline 18 \\ 260 \\ \hline 278 \end{array}$$

Answer 278 cubic feet

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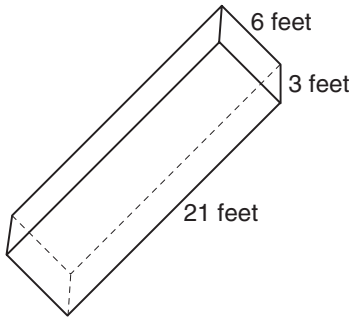
SCORE POINT 0

4 What is the volume, in cubic feet, of the rectangular prism shown below?



Volume of rectangular prism $= lwh$
$=$ length $\times$ width $\times$ height

Show All Work

$$\begin{array}{r} 21 \\ \times\ 6 \\ \hline 126 \\ +\ 63 \\ \hline 189 \end{array} \qquad \begin{array}{r} 3 \\ \times 21 \\ \hline 63 \end{array}$$

Answer 189 cubic feet

Test 8—Question 4
Score Point 0

This response shows an incorrect process that leads to an incorrect answer. Therefore, this response receives a Score Point 0.

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Test 8—Question 5: Problem Solving

5 An arena has 990 seats. There are 78 events scheduled at the arena this year. Bert used the following calculation to estimate the number of tickets the arena will sell this year if every event is sold out.

$$900 \times 70 = 63{,}000$$

On the lines below, identify whether Bert's estimate is reasonable and explain how you determined your answer.

What is the ACTUAL number of tickets that will be sold this year if every event is sold out?

Show All Work

Answer _____ tickets

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Exemplary Response:

- Bert's estimate is not very reasonable because he rounded poorly. Bert's estimate would be more reasonable if he rounded 990 to 1,000 and 78 to 80.

OR

- Other valid explanation

AND

- 77,220 tickets

AND

- Correct process

Sample Process:

- $990 \times 78 = 77{,}220$

OR

- Other valid process

NOTE: Award 1 point for a correct process with an error in computation.

Rubric:

3 points	Exemplary response
2 points	Two correct components
1 point	One correct component
0 points	Other

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Test 8—Question 5
Score Point 3

This response matches the exemplary response contained in the rubric. The student gives a valid explanation, shows a correct process, and gives the correct answer of 77,220 tickets. The response receives a Score Point 3.

SCORE POINT 3

5 An arena has 990 seats. There are 78 events scheduled at the arena this year. Bert used the following calculation to estimate the number of tickets the arena will sell this year if every event is sold out.

$$900 \times 70 = 63{,}000$$

On the lines below, identify whether Bert's estimate is reasonable and explain how you determined your answer.

Bert estimate is wrong because 990 rounds to 1,000 not 900 and 78 rounds to 80 not 70 so the estimate would be 80,000.

What is the ACTUAL number of tickets that will be sold this year if every event is sold out?

Show All Work

```
   7
  990
× 78
    1
 61 7920
 69300
 77220
```

Answer 77,220 tickets

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SCORE POINT 2

5 An arena has 990 seats. There are 78 events scheduled at the arena this year. Bert used the following calculation to estimate the number of tickets the arena will sell this year if every event is sold out.

$$900 \times 70 = 63{,}000$$

On the lines below, identify whether Bert's estimate is reasonable and explain how you determined your answer.

Bert's estimate is not reasonable because 990 rounds to 1,000, not 900, and 78 rounds to 80, not 70. Both numbers are a lot lower than the real one, so the answer will be lower.

What is the ACTUAL number of tickets that will be sold this year if every event is sold out?

Show All Work

```
   6 7̶
    990
  ×  78
    1
 1+7920
  69300
  87,220
```

Answer 87,220 tickets

Test 8—Question 5
Score Point 2

This response gives a valid explanation and shows a correct process. However, the student makes an error in computation when multiplying 990 and 78, which results in an incorrect answer. Therefore, this response receives a Score Point 2.

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Test 8—Question 5
Score Point 1

This response gives an invalid explanation and shows a correct process for determining the number of tickets. However, the student makes an error in computation when multiplying 990 and 78, which results in an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

5 An arena has 990 seats. There are 78 events scheduled at the arena this year. Bert used the following calculation to estimate the number of tickets the arena will sell this year if every event is sold out.

$$900 \times 70 = 63{,}000$$

On the lines below, identify whether Bert's estimate is reasonable and explain how you determined your answer.

Yes because you roun up to estamaites.

What is the ACTUAL number of tickets that will be sold this year if every event is sold out?

Show All Work

~~162~~
990
× 78
7470
+ ~~1~~ 1 69300
76,770

Answer 76,770 tickets

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SCORE POINT 0

5 An arena has 990 seats. There are 78 events scheduled at the arena this year. Bert used the following calculation to estimate the number of tickets the arena will sell this year if every event is sold out.

$$900 \times 70 = 63{,}000$$

On the lines below, identify whether Bert's estimate is reasonable and explain how you determined your answer.

It is not reasonalble.

What is the ACTUAL number of tickets that will be sold this year if every event is sold out?

Show All Work

```
  990
× 70
-----
  000
56000
```

Answer 56,000 tickets

Test 8—Question 5
Score Point 0

This response gives an incomplete explanation and shows an incorrect process that leads to an incorrect answer. Therefore, this response receives a Score Point 0.

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Test 8—Question 6: Data Analysis and Probability

6 The winner of Ms. West's class spelling bee is allowed to choose one gumball from a jar. The number of each color of gumball in the jar is shown in the table below.

Gumball Jar

Color	Number in Jar
Red	𝍸 𝍸
White	𝍸 𝍸 ||||
Green	𝍸
Pink	𝍸 𝍸 |

What is the probability that the winner will randomly choose a red gumball?

Show All Work

Answer _____

Exemplary Response:

- $\frac{1}{4}$ or $\frac{10}{40}$ or 0.25 or 25% or 1:4

OR

- Other valid probability

Sample Process:

- $10 + 14 + 5 + 11 = 40$

  $\frac{10}{40} = \frac{1}{4}$

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct process; error in computation
0 points	Other

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SCORE POINT 2

6 The winner of Ms. West's class spelling bee is allowed to choose one gumball from a jar. The number of each color of gumball in the jar is shown in the table below.

Gumball Jar

Color	Number in Jar
Red	𝍸 𝍸
White	𝍸 𝍸 ||||
Green	𝍸
Pink	𝍸 𝍸 |

What is the probability that the winner will randomly choose a red gumball?

Show All Work

$$\begin{array}{r} {\scriptstyle 1} \\ 10 \\ 14 \\ +\ 5 \\ \hline 11 \\ \hline 40 \end{array}$$

Answer $\frac{10}{40} = \frac{1}{4}$

Test 8—Question 6 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct probability of $\frac{1}{4}$. The response receives a Score Point 2.

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Test 8—Question 6
Score Point 1

This response shows a correct process for determining the probability. However, the student makes an error in computation when finding the total number of gumballs, which results in an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

6 The winner of Ms. West's class spelling bee is allowed to choose one gumball from a jar. The number of each color of gumball in the jar is shown in the table below.

Gumball Jar

Color	Number in Jar
Red	𝍸 𝍸
White	𝍸 𝍸 ||||
Green	𝍸
Pink	𝍸 𝍸 |

What is the probability that the winner will randomly choose a red gumball?

Show All Work

$$\begin{array}{r} {\scriptstyle 2} \\ 10 \\ 14 \\ 5 \\ +11 \\ \hline 50 \end{array} \qquad \frac{10}{50} = \frac{1}{5}$$

Answer $\frac{1}{5}$

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SCORE POINT 0

6 The winner of Ms. West's class spelling bee is allowed to choose one gumball from a jar. The number of each color of gumball in the jar is shown in the table below.

Gumball Jar

Color	Number in Jar
Red	𝍸 𝍸
White	𝍸 𝍸 ||||
Green	𝍸
Pink	𝍸 𝍸 |

What is the probability that the winner will randomly choose a red gumball?

Show All Work

White
Green
Pink } 3

$\frac{1}{3}$

Red } 1

Answer $\frac{1}{3}$ of a chance

Test 8—Question 6
Score Point 0

This response shows an incorrect process that leads to an incorrect answer. Therefore, this response receives a Score Point 0.

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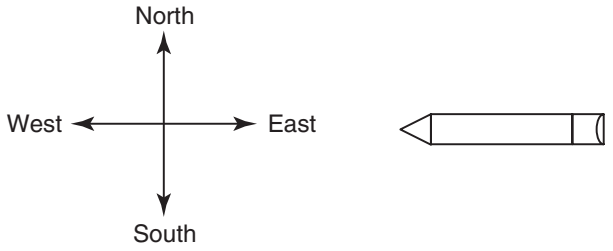
Test 8—Question 7: Geometry

7 The point of the pencil shown in the diagram below is pointing west.



What direction will the point of the pencil be facing if it is rotated a $\frac{1}{2}$ turn?

Answer _____

How many degrees are in a $\frac{1}{2}$ turn?

Answer _____ °

Exemplary Response:

- East

AND

- 180°

NOTE: If the second component is correct based on an incorrect first component, award one point.

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

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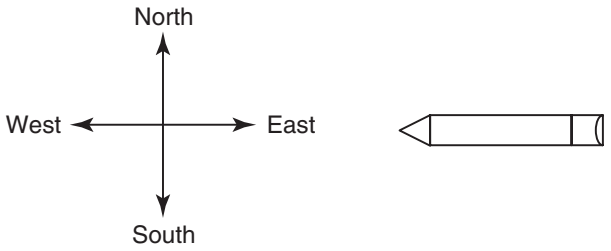
SCORE POINT 2

7 The point of the pencil shown in the diagram below is pointing west.



What direction will the point of the pencil be facing if it is rotated a $\frac{1}{2}$ turn?

Answer East

How many degrees are in a $\frac{1}{2}$ turn?

Answer 180 °

Test 8—Question 7
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives the correct answers of east and 180°. The response receives a Score Point 2.

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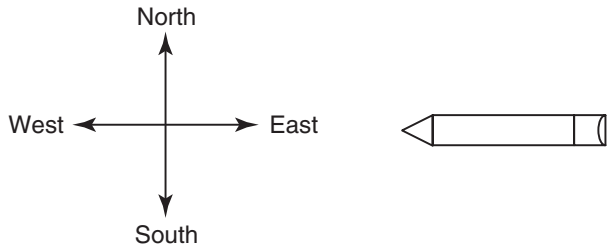
Test 8—Question 7
Score Point 1

This response shows only the correct answer of east. Therefore, this response receives a Score Point 1.

SCORE POINT 1

7 The point of the pencil shown in the diagram below is pointing west.



What direction will the point of the pencil be facing if it is rotated a $\frac{1}{2}$ turn?

Answer east

How many degrees are in a $\frac{1}{2}$ turn?

Answer 50 °

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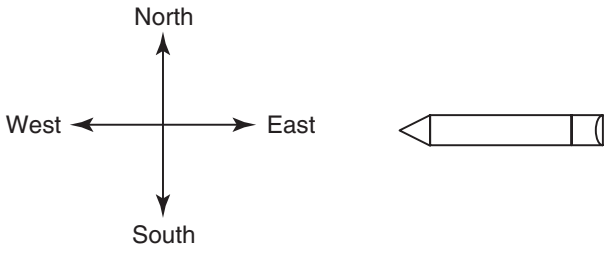
SCORE POINT 0

7 The point of the pencil shown in the diagram below is pointing west.



What direction will the point of the pencil be facing if it is rotated a $\frac{1}{2}$ turn?

Answer North

How many degrees are in a $\frac{1}{2}$ turn?

Answer 50 °

Test 8—Question 7
Score Point 0

This response shows two incorrect answers. Therefore, this response receives a Score Point 0.

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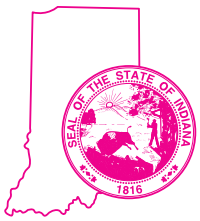

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